In the claims:

All of the claims standing for examination are reproduced below. Claims 1, 12 and 24 are amended in this response.

1. (Previously presented) An automated-protection-switching (APS) software suite for distribution over multiple processors of a distributed processor router comprising:

an APS server module running on a first one of the multiple processors for managing communication and distributing configuration and state information; and

APS client modules running on second ones of the multiple processors, the APS client modules for monitoring interface state information, reporting to the APS server application, and for negotiating with other APS client modules;

characterized in that all application-dependent data resides locally in kernel software of individual APS modules, and further characterized in that APS interface relocation from a primary interface to a backup interface is performed through direct communication between the APS client modules running on the processors supporting the involved interfaces, and all of the required communication between distributed APS client modules are completed to perform a switchover within a 50 millisecond time window required by APS protocol.

2. (Original) The APS software suite of claim 1 wherein the distributed processor router is connected to and operating on a data-packet-network.

3. (Previously presented) The APS software suite of claim 2 wherein the data-packet-network is the Internet network.

4. (Original) The APS software suite of claim 1 wherein the APS software suite is implemented to protect the integrity of a plurality of primary interfaces of the router by enabling backup of individual ones of the interfaces at any given time during router operation.

5. (Original) The APS software suite of claim 4 wherein the plurality of primary interfaces comprise an APS grouping of interfaces connected to a SONET network.

6. (Original) The APS software suite of claim 1 wherein the configuration and state information generic to a primary interface for relocation is mirrored to the client supporting the backup interface for the purpose of initializing and activating the backup interface to function as the primary interface.

7. (Original) The APS software suite of claim 1 wherein the distributed processors communicate with each other through a network of fabric cards implemented within the router.

8. (Original) The APS software suite of claim 1 wherein all communication exchanges between the distributed APS components follow a message sequence scheme wherein each request and response has a sequence number.

9. (Original) The APS software suite of claim 1 wherein interface relocation is initiated by an APS client module after detecting an event requiring relocation at the primary interface to be relocated.

10. (Original) The APS software suite of claim 5 wherein the APS grouping of interfaces is physically supported on one processor.

11. (Original) The APS software suite of claim 5 wherein the APS grouping of interfaces is distributed to and physically supported by multiple processors.

12. (Previously presented) A distributed processor router, comprising:

a plurality of communicating processors supporting a plurality of communication interfaces;

an APS server module running on a first one of the plurality of processors for managing communication and distributing configuration and state information; and

APS client modules running on second ones of the multiple processors, the APS client modules for monitoring interface state information, reporting to the APS server module, and for negotiating with other APS client modules;

characterized in that all application-dependent data resides locally in kernel software of individual APS modules, and further characterized in that APS interface relocation from a primary interface to a backup interface is performed through direct communication between the APS client modules running on the processors supporting the involved interfaces, and all of the required communication between distributed APS client modules are completed to perform a switchover within a 50 millisecond time window required by APS protocol.

13. (Original) The distributed processor router of claim 12 wherein the data-packet-network is the Internet network

14. (Original) The distributed processor router of claim 13 wherein the plurality of primary router interfaces comprise an APS grouping of interfaces connected to a SONET network.

15. (Original) The distributed processor router of claim 12 wherein the APS software suite includes a server application, a server-client application, and a client module.

16. (Original) The distributed processor router of claim 15 wherein the server application runs on a control card, and the server-client application as well as the client module run on a line card.

17. (Original) The distributed processor router of claim 12 wherein indication of an event is an APS signal received through the target interface on the backup processor.

18. (Original) The distributed processor router of claim 17 wherein the received APS signal indicates one of failure or severe degradation of the target interface.

19. (Original) The distributed processor router of claim 17 wherein the received APS signal indicates an administrative request for interface relocation.

20. (Original) The distributed processor router of claim 12 wherein configuration and state information generic to a targeted interface for relocation is mirrored to the backup router interface for the purpose of initializing and activating the backup interface to function as the primary interface.

21. (Original) The distributed processor router of claim 12 wherein the distributed processors communicate with each other through a network of fabric cards implemented within the router.

22. (Original) The distributed processor router of claim 12 wherein all communication exchanges between the distributed APS components follow a message sequence scheme wherein each request and response has a sequence number.

23. (Original) The distributed processor router of claim 12 wherein the primary and backup processors comprise the same processor.

24. (Previously presented) A method for relocating a primary router interface to a designated backup router interface using an APS module suite distributed over multiple processors of a distributed processor data router comprising steps of:

(a) mirroring current configuration and state information of the primary router interface to the processor supporting the designated backup router interface;

(b) receiving indication of a requirement to initiate an APS switchover;

(c) determining if the backup router interface is available;

(d) activating the designated backup interface using the mirrored configuration and state information, and

(e) completing steps (a) through (d) within a 50 millisecond time window required by APS protocol to perform a switchover[.];

wherein all application-dependent data resides locally in kernel software of individual APS modules.

25. (Previously presented) The method of claim 24, comprising an additional step (f) for reporting any changed route results to a task manager responsible for distributing updated route tables to processors.

26. (Original) The method of claim 25, comprising an additional step for updating a forwarding data base according to a switchover made.

27. (Original) The method of claim 24 wherein the distributed processor data router is connected to and operating on a data-packet-network at the time of interface relocation.

28. (Original) The method of claim 27 wherein the data-packet-network is the Internet network.

29. (Original) The method of claim 24 when the primary router interface is a part of a group of interfaces connected to a SONET network.

30. (Original) The method of claim 24 wherein in step (b) the indication is received at the primary interface.

31. (Original) The method of claim 24 wherein, in step (b), the indication is received at the backup interface.

32. (Original) The method of claim 24 wherein in step (b) the indication is of the form of an administrative request.

33. (Original) The method of claim 24 wherein in step (c) determination of availability of the backup interface partly depends on a priority state of the interface requiring backup.

34. (Original) The method of claim 24 wherein in step (c) the backup interface is physically located on a processor separate from that of the primary router interface.

35. (Original) The method of claim 24 wherein in step (a) the configuration and state information is selected from a table of such sets of information stored on the processor hosting the backup router interface.